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**REPORT OF THE COMMITTEE ON RESEARCH.
SUBJECTS UNDER WAY AND PROPOSED.**

P. F. WALKER.

AGRICULTURE.

Work under way:

Experiments in dairy feeding.

Deficiencies of corn as an exclusive ration for young pigs.

A study of the factors which determine gluten quality in flour.

Chemical and nutritional study of alfalfa.

The effect of prolonged production of alfalfa upon soil fertility.

The effect of different soil treatments, under dry-land agriculture conditions, on the nitrogen and carbon content of the soil.

State soil survey, and analysis of soil samples from state fertility investigations.

A study of nutrients in forage crops grown under different conditions and harvested at different stages of maturity.

Agricultural Experiment Station, K. S. A. C.; C. O. Swanson, Director.

Fruit bud formation; soil treatment, training, value of spraying.

Potato experiments.

Vegetable trial garden experiments; the effect of pruning, staking and spraying of tomato vines, varietal tests. Also tests to determine the practicability of growing certain vegetables during hot months.

Horticultural Department, K. S. A. C.

Garden project work.

Farm management (students collecting data on social and business needs and conditions in rural communities).

By Florence Billig and C. R. Phipps, K. S. N. S.

The relation of certain physical constants, nitrogen, and acidity to soil type.

By J. C. Russell, McPherson College.

Work to be started in 1917:

A study of the loss of sulphur in cultivated Kansas soils.

Acidity in soils.

Methods for the determination of acidity in organic materials such as flour, silage, feeds, and forage crops.

A study of soil colloids in relation to their effects upon soil texture, as well as upon general problems of plant nutrition.

Agricultural Experiment Station, K. S. A. C.

New method for determination of the moisture equivalent of soils.

Crop yields under a rotation system and a system of fertilizers on the College farm. (Same to include a list of a six-year grain rotation and phosphorus fertilizer and manure.)

Relation of fifth normal nitric acid soluble phosphorus to soil productivity in case of some McPherson county soils.

J. C. Russell, McPherson College.

Farm labor incomes from dairying as compared with those from other farm enterprises in Lyon county, Kansas.

Mr. Phipps, Mr. Roske, students, K. S. A. C.

AGRONOMY.

Work under way:

Causes of winterkilling of grain crops.

The cause and prevention of yellow berry in wheat.

The relation of soil type and moisture content to winterkilling of crops growing on it.

Cause of sterile florets in wheat and other cereals.

Changes in vegetative cover under pasture conditions, and the relation to pasture management.

The effect of time of cutting on the composition, yield, feeding value and permanence of stand of alfalfa.

Factors in development of kafir heads.

Factors in cultivation of corn.

Effects of environment on the habits of growth of Kentucky blue grass.

Effect of time of cutting on the yield, composition and feeding value of sudan grass, sorghums, kafir and corn.

Relative yields, rate of growth, temperature of the soil, and root penetration of listed and surface planted corn.

Relation of seeding winter grains in furrows to winterkilling and yield.

Effect of corn, kafir, and milo on the following crop of small grain.

Relation of time and method of preparing ground on the development of plant food and the yield of wheat.

Effect of different kinds of mulches on the conservation of water and the development of nitrates in the soil.

Relation of cropping systems and fertilizers to the composition, yield and milling value of wheat, and the yield of corn, alfalfa, cowpeas, and kafir.

Relation of variety to composition and yield of wheat.

The relation of time of seeding to winterkilling, tillering, and infestation of Hessian fly and yield of wheat.

The variety factor in the infestation of wheat by Hessian fly.

Work to be begun in 1917:

The effect of time of cutting on the yield, composition, and feeding value of sweet clover.

The relation of sequence of cropping to the yield of wheat, corn, alfalfa, oats, barley, and sorghums.

Work which is desirable:

Relation of humidity of air to temperature and the water requirements of various grain crops.

Further investigations along lines given above.

The above work is all under the direction of the Agronomy Department, K. S. A. C.

BACTERIOLOGY.

Work now under way:

A study of silage fermentation.

Supervised by O. W. Hunter, K. S. A. C.

Poultry disease investigations.

Supervised by J. G. Jackley, K. S. A. C.

A study of the differences existing in the nitrifying flora of soils possessing high and low nitrifying powers.

Supervised by P. L. Gainey, K. S. A. C.

Bacteriological investigations of flour.

Supervised by Miss Grace Glasgow, K. S. A. C.

Bacteriological investigations of dressed and undressed poultry shipped by parcel post.

Supervised by Prof. L. D. Bushnell, K. S. A. C.

Research upon improvements in methods of water analysis and upon the bacterial flora of the state of Kansas, with special reference to water purification and pollution of water supplies.

State Water Laboratory; Prof. C. C. Young, Director.

Study of *Leptothrix bucalis*.

Action of certain bacteria on starch grains.

By Prof. F. H. Billings, University of Kansas:

Studies on some pleomorphic streptococci.

Comparative content of Eck-fistula dogs.

Effects of certain chemical substances on the memolytic reaction.

Effect of amino acids on the hemolytic reaction.

Effect of different alkaloids on bacterial metabolism.

By Prof. N. P. Sherwood, University of Kansas.

The presence of soil and secal strains of organisms of the colon-aërogenes group in the surface waters of Kansas during wet and dry seasons.

By Prof. Myrtle Greenfield and Wilbur N. Skroup, University of Kansas.

The variability of organisms of the colon-aërogenes group in unfavorable media.

By Prof. Myrtle Greenfield and J. B. McNaught, University of Kansas.

Normal dog hemolysins.

Bacterial flora of normal urine.

Bacterial flora of cistern water.

Bacterial examination of Hamburger steak.

Bacterial examination of baby foods.

By Hal Sherman, J. D. Milligan, R. R. Fulton, E. Lee Treece, Roy Rankin, under the direction of Prof. F. H. Billings, University of Kansas.

Longevity of organisms of the colon-aërogenes group in soil and water.

By Prof. C. C. Young and Myrtle Greenfield.

BOTANY.

Work under way:

Anatomical studies of Kansas xerophytes.

Investigation of trees and shrubs adapted to Kansas conditions.

By Prof. W. C. Stevens, University of Kansas.

Semipermeability of seed coats.

Measurement of surface forces in soils.

By Dr. C. A. Shull, University of Kansas.

Anatomical study of the apical region of the mature sporophyte of the Marattiaceæ.

Origin of the mucilage ducts of the Marattiaceæ.

Survey of Kansas algæ.

By Dr. Grace M. Charles, University of Kansas.

Investigations in plant pathology.

By Dr. A. J. Mix, University of Kansas.

Anatomical studies of Kansas xerophytes.

Students, under the direction of Prof. W. C. Stevens.

Problems in plant chemics and plant physics.

Students, under the direction of Prof. C. A. Shull.

Survey of the algæ of Kansas.

Students, under the direction of Prof. Grace M. Charles.

Problems in plant pathology.

Students, under the direction of Dr. A. J. Mix.

Botanical survey of Kansas.

Students, under the direction of Prof. C. M. Sterling.

Work to be begun in 1917:

Continuation of the above investigations at the University of Kansas.

Preparation of a guide to the wild flowers of Kansas.

By Grace R. Meeker, librarian, Ottawa, Kan.

Systematic classification of plants of Lyon county.

Work in plant pathology, locally, endeavoring to discover as far as possible what plant and animal parasites are affecting our plants, those of economic or other value first.

By Prof. F. U. G. Agrelius, K. S. N. S.

Work which is desirable:

A complete survey of present pathological conditions.

Prof. F. U. G. Agrelius, K. S. N. S.

Problems in plant physiology and pathology (greenhouse equipment lacking.)

Prof. W. C. Stevens, University of Kansas.

CHEMISTRY.

Work under way:

The salt industry in Kansas.

A search for potash in Kansas.

The recovery of zinc wastes of flotation.

A survey of the natural gases of the midcontinental field.

The new petroleum of Kansas.

Disposition of creamery wastes.

The coking and gas-making qualities of Kansas coals.

By the Division of State Chemical Research; Prof. W. A. Whitaker, Director, University of Kansas.

Overvoltage in liquid ammonia solutions.

Dielectric constant of liquid ammonia up to its critical point.

Inert gases in natural gas.

Rate of reaction between hydrocyanic acid and formaldehyde as influenced by hydrogen iron.

By instructors O. L. Maag, W. N. Latimer, C. W. Seibel, and Harold Lentz, under the direction of Prof. H. P. Cady, University of Kansas.

Investigations of gas, oil, coal, and cement plaster.

By Prof. H. C. Allen, University of Kansas.

Nature of liquid potentials and the measurement of the same.

By Prof. P. V. Faragher, University of Kansas.

Researches in the cultivation of medicinal plants in the United States.

Further investigations of the digestive and baking qualities of corn oil in connection with mixed flour, especially a mixture of the commercial corn-starch flour and a high protein flour.

The composition of artificial rubber.

Further investigation of the poisonous constituents of mescale buttons.

By Prof. L. E. Sayre, University of Kansas.

Investigation of the new preparation now made official in the new Pharmacopœia IX; a critical study of the same.

By Prof. F. J. Zuck, University of Kansas.

A study of the value of the American-grown Stramonium.

By Prof. L. D. Havenhill, University of Kansas.

A study of the new constituents of ipecac with reference to their therapeutic value.

R. L. Ritter, student, under the direction of Prof. L. E. Sayre, University of Kansas.

Methods of food analysis with particular reference to starch determinations and fat determinations.

By Prof. W. S. Long, University of Kansas.

The reaction of the formamidines.

By Prof. F. B. Dains, University of Kansas.

On the constitution and synthesis of certain pyrazol derivatives.

By Prof. Rolla N. Harger, University of Kansas.

On the action of acyl chlorides on certain thioureas and thiazols,

By R. Q. Brewster, Instructor, University of Kansas.

Reactions in liquid ammonia.

By Instructor J. B. Whelan, University of Kansas.

On the preparation and reactions of the isothiohydantoins.

On the introduction of iodine into aromatic amines.

On the action of substituted amines on carbonyl diurethan.

The synthesis of certain halogen substituted azo dyes.

By Roy Irwin, W. M. Janney, H. W. Greider, C. H. Kidwell, Carl L. Johnson, and A. T. Beckley, under the direction of Prof. F. B. Dains, University of Kansas.

Nutritive properties of maize and kafir.

By Prof. A. G. Hogan, K. S. A. C.

Investigation of the form of nitrogen occurring in plants, and especially that nitrogen which cannot be utilized as a food by animals.

By Prof. P. J. Newman, K. S. A. C.

The vitamin content of maize.

The effect of autoclaving casein on its chemical composition and nutritive value.

By J. S. Hughes, K. S. A. C.

Investigation of the auto digestion of flour and the influence of inorganic salts upon this action. This includes a study of whole-wheat flour, patent flour, low-grade flour and straight flour, as well as the different mill streams from several commercial mills of the state.

By E. L. Tague, K. S. A. C.

The possibility of fats other than butter fat being used in the manufacture of evaporated and condensed milks.

The analysis of diabetic and dietetic foods.

The analysis of canned beans (for poor material.)

Comparison of methods for the determination of fat in ice cream, evaporated milks, condensed and dried milks.

The analysis of soils; samples of soil and hay taken from near a smelter in Kansas for arsenic and lead.

The detection of poor materials in mixed flours.

Pectin from grape fruit.

By Prof. C. A. A. Utt, K. S. A. C.

Food poisoning resulting from eating canned salmon.

By Profs. L. E. Bushnell and C. A. A. Utt, K. S. A. C.

The chemistry of paint, stains and varnishes.

By Prof. J. A. Yates, M. T. N. S.

Preparation of novocain and ethylene chorhydrine.

By Prof. Geo. E. Miller, Cooper College.

ENGINEERING.

Work under way:

The disposal of sewage in Kansas municipalities.

The softening of municipal water supplies.

The removal of iron from municipal water supplies.

By the Bureau of Chemical Industrial Research; Prof. W. A. Whitaker, Director, University of Kansas.

The measurement of electrical energy, electricity meters, rates for electrical energy.

By Prof. G. C. Shadd and C. A. Johnson, University of Kansas.

Distribution system for electric power as now employed in Kansas, with a study of possibilities for future development.

By Prof. F. E. Johnson, University of Kansas.

Investigation of the electrostatic field of high-voltage porcelain insulators.

By Prof. E. E. Hartman, University of Kansas.

Carbon brush tests.

Corona voltmeter tests.

Distribution of the electrostatic field of porcelain insulators.

By advanced students, in charge of Prof. E. E. Hartman, University of Kansas.

Stresses in railroad track.

By Prof. C. C. Williams, University of Kansas.

Determination of means for measuring the definition of optical instruments, surveying instrument telescopes in particular.

By Prof. W. C. McNown, University of Kansas.

Investigation of pressure of sand on sides of bins.

By Prof. F. L. Brown, University of Kansas.

Storage for impounding reservoirs in Kansas.

By Prof. C. A. Haskins, University of Kansas.

Probability of excessive rains.

By Professors Haskins and Welker, University of Kansas.

Industrial survey of Kansas, with study of conditions favorable to development of manufacturers.

By Prof. P. F. Walker, University of Kansas.

Efficiencies of gear teeth.

Efficiency of autogenous welded joints.

By Prof. F. H. Sibley, University of Kansas.

Relation of CO₂ content of flue gases to steam boiler efficiency.

By Prof. A. H. Sluss, University of Kansas.

Power requirements in the cement industry.

Pressure volume relationship of commercial gases.

By Prof. J. D. Garver, University of Kansas.

Concentration and metallurgy of vanadium ores.

Mechanical separation of zinc sulphide from iron and iron sulphide.

By Prof. R. L. Grider, University of Kansas.

Tests on concrete with a view of determining the effects of freezing and thawing upon the strength with various mixtures of ingredients.

By Prof. L. E. Conrad, K. S. A. C.

Tests on lubricating oils.

Tests on internal combustion engines with low-grade fuels.

Tests on oil traction engines.

Investigations on insulating materials for refrigeration.

Investigations of various carburetors for automobile motors, particularly with the view of utilizing fuels heavier than gasoline.

Investigations on the effect of compression upon the rate of flame propagation and maximum pressure in the case of internal-combustion engines, and with various fuels.

By Prof. A. A. Potter and mechanical engineering associates, K. S. A. C.

Investigations of the relative durabilities of various kinds of insulating materials for electrical conductors.

Investigation on windmill electric-lighting plant.

A mathematical study of the electrolytic theory.

Investigations on the cost of cooking and heating by electricity and with various appliances now on the market.

Investigations on storage batteries.

By Prof. C. E. Reid and electrical engineering associates, K. S. A. C.

Investigation and survey of location and arrangement of farm homes, farm buildings and outbuildings.

Investigation and survey of water-supply problems for farm homes, stables and feed lots.

Investigation and survey of heating and plumbing problems and systems for farm houses, garages, greenhouses, etc.

By Prof. J. D. Walters, K. S. A. C.

Investigations on paints.

By Prof. H. H. King, K. S. A. C.

Devices for use on binders when cutting grain in wet fields.

By Prof. F. A. Wirt and R. E. Wiseman, K. S. A. C.

Use of straw spreaders.

By Malcolm Aye, under the direction of Prof. F. A. Wirt, K. S. A. C.

Foundry and machine shop problems with attention to Kansas materials. Hardness tests on cast iron.

By Prof. W. W. Carlson, K. S. A. C.

Work to be started in 1917:

Durability of Kansas pavements.

Survey of available concrete aggregates in Kansas.

Shrinkage of concrete in setting.

Laws of pressure in viscous materials.

Water discharge over horizontal circular weirs.

Silt-carrying capacity of the Kansas river, and its relation to stage of the river.

By Departments of Civil Engineering and Mechanics, University of Kansas.

Power requirements in the metal-manufacturing industry.

By the Department of Mechanical Engineering, University of Kansas.

Investigations with steam engines and turbines, steam meters and Diesel oil engines.

By Department of Mechanical Engineering, K. S. A. C.

ENTOMOLOGY.

Work under way:

A study of the life history habits, and methods of control of the Hessian fly.

By Prof. Geo. A. Dean and J. W. McCulloch, K. S. A. C.

Heat or high temperature as a means of controlling insects.

By Prof. Geo. A. Dean, K. S. A. C.

A study of the life history, habits and methods of control of the corn-ear worm.

A study of the life history, habits and efficiency of the chinch-bug egg parasite.

A study of the Thysanoptera of Kansas.

By J. W. McCulloch, K. S. A. C.

A study of the life history, habits, and methods of control of the kafir ant and the maize bill-bug.

A study of the life history, habits and methods of control of subterranean insects, such as white grubs, wireworms, and false wireworms.

By J. W. McCulloch and W. P. Hayes, K. S. A. C.

A study of the Rhynchophora of Kansas.

By W. P. Hayes, K. S. A. C.

A study of the life history, habits and methods of control of fruit insects.

A study of the life history, habits and methods of control of termites.

A study of the life history, habits and methods of control of shade-tree insects.

By Prof. J. H. Merrill and A. E. Ford, K. S. A. C.

A study of the insects affecting alfalfa.

A study of the life histories of insects under controlled temperature and moisture conditions.

By Prof. M. C. Tanquary and R. R. Reppert, K. S. A. C.

Morphological, embryological and taxonomic studies on *Enchytræidæ* (*Oligochæta*).

Biological investigations on aquatic insects.

Experimental studies on certain free-living nematodes.

By Prof. Paul S. Welch, K. S. A. C.

Heat or high temperature as a means of controlling insects.

By Prof. Geo. A. Dean, K. S. A. C.

Relations between Toxoptera and *Lysophlebus*; a study of insect parasitism.

Relations of temperature to growth and development.

By Prof. S. J. Hunter, University of Kansas.

The limnology and ecology of Kansas Hemiptera.

By Prof. H. B. Hungerford, University of Kansas.

Physiological effects of insecticides.

By Prof. P. W. Claassen, University of Kansas.

Hibernation of orchard insects.

By W. H. Wellhouse, assistant state entomologist, University of Kansas.

A revision of the *Coccidæ* of Kansas.

By P. Lawson, instructor, University of Kansas.

The edipodinæ of Kansas.

By R. H. Beamer, assistant curator, University of Kansas.

Soil insects.

By B. P. Young, field assistant, University of Kansas.

The *Gyrinidæ* of Kansas.

By Forrest Anderson, student, University of Kansas.

The biology and economic value of *Paleacrita vernata*.

By Harry Fackler, student, University of Kansas.

Illustrative Processes for biological reproductions.

By Ellen Edmonson, student, University of Kansas.

Work to be begun in 1917:

Continuation of the biological survey of the Arthropoda of Kansas.

By the University of Kansas, Entomological Department.

Work which is desirable:

Relation of temperature to growth and development.

By the University of Kansas, Department of Entomology.

FORESTRY.

Work under way:

Developing of a practical method of controlling or preventing the damping off of coniferous seedlings in the nursery beds.

The developing of a practical method of treating red cedar seed to secure satisfactory and uniform germination in the nursery beds.

By Prof. C. A. Scott, K. S. A. C.

The effect of electric currents upon growing trees.

The effect of insecticides and other chemicals when introduced into the circulation by injection into the vascular system of the plant direct. (Experiments mostly confined to trees.)

By Prof. L. T. Reser, with aid of students, Baker University.

Work to be begun during 1917:

A study of the root development of fall-planted trees to determine the advantages of fall planting from this standpoint, if any exists.

Prof. Chas. A. Scott, K. S. A. C.

GEOLOGY.

Work under way:

The study of geology in its relation to the production of oil and gas.

By Alva J. Smith, Emporia.

Preparation of volume of geology of midcontinental oilfields.

Manuscript on general resumé of Kansas coal fields.

Manuscript on general resumé of Kansas gypsum beds.

Introduction to report on Cretaceous clays of Kansas.

Introduction to report on geology of good-roads material, clays, stone and cement.

By Prof. E. Haworth, University of Kansas.

Stratigraphy of the Kinderhook rocks of Missouri (to be published by Missouri Geological Survey.)

Lower Mississippian geology of Missouri and western Illinois.

Contributions to the paleontology of the Mississippian of the Central States.

By Dr. Raymond C. Moore, University of Kansas.

Contribution to the geology of Bermuda Islands.

Petrography of crystalline rocks of Kansas.

By Dr. Winthrop P. Haynes, University of Kansas.

Glacial deposits of Kansas.

By Prof. J. E. Todd, University of Kansas.

MATHEMATICS.

Work under way:

Modern Geometry; a new line of material being developed into a textbook.

By Profs. John N. Van der Vries and E. B. Stouffer, University of Kansas.

Revision of textbook material in analytic geometry and calculus.

By Prof. C. H. Ashton, University of Kansas.

Notes on the n-dimensional cycles of an algebraic n-dimensional variety. (Published in *Rendiconti of Palermo*, Italy.)

Geometry on ruled surfaces. (Published in *American Journal of Mathematics*.)

The equation of Picard-Fuchs for an algebraic surface with arbitrary singularities. (Published in *Bulletin of American Mathematical Society*.)

Cubic surfaces and their nodes. (Published in *University of Kansas Science Bulletin*.)

By Prof. S. Lefschetz, University of Kansas.

Solutions of linear nonhomogeneous partial differential equations.

By Professor Steinley, University of Kansas.

A study of comparative efficiency in algebraic construction.

By Prof. W. H. Garrett, Baker University.

Analytical geometry; material to be used for textbook purposes.

By Professors Andrews and White, K. S. A. C.

Preparation of material for an arithmetic adapted to the needs of the rural school.

By Professors Remick and Stratton.

PHYSICS.

Work under way:

Optical properties of metals.

Cold lights.

By Prof. George W. Tidd, head of the Physics Department, K. S. N. S.

Joule-Thomson porous-plug experiments on gases.

By Prof. F. E. Kester, University of Kansas.

Magnetic properties of crystals.

By Prof. T. T. Smith, University of Kansas.

Conditions affecting transmission of wireless signals.

By Instructor L. E. Whittemore, University of Kansas.

Possibility of wireless signals by use of antenna overtones.

By W. O. Lytel, graduate student, University of Kansas.

Work which is desirable:

Possibility of longitudinal ether vibrations in connection with certain light phenomena.

By Prof. George W. Tidd, K. S. N. S.

High-frequency currents.

By W. A. Van Vons, K. S. A. C.

PHYSIOLOGY.

Work under way:

The influence of the glands of internal secretion upon protein metabolism.

By Dr. S. A. Matthew, University of Kansas.

The influence of caffeine and diet on an athlete and nonathlete.

The influence of different kinds of music on cardiac activity and blood pressure.

By Dr. I. H. Hyde, University of Kansas.

The influence of the liver upon protein metabolism.

By Instructor Clarence Smith, University of Kansas.

The effect of oxygen on fatigue.

The efficiency of colored and white women compared during different intervals of time.

By students, under the direction of Dr. I. H. Hyde, University of Kansas.

Work to be started during 1917:

Sensory and motor regions of stimulation as recorded by the string galvanometer.

By Dr. I. H. Hyde, University of Kansas.

SOCIOLOGY AND ECONOMICS.

Work under way:

Social survey of Council Grove, Kan.

By Dr. M. C. Elmer, University of Kansas.

Collection of data concerning sanitary conditions of every city lot in Lawrence.

By Dr. M. C. Elmer, University of Kansas, and students in Department of Sociology.

The marketing of Kansas butter.

The fundamental principles of coöperation.

By Instructor T. Macklin, K. S. A. C.

Marketing of Kansas poultry and eggs.

By Ralph Van Zile, under the direction of Mr. Macklin, K. S. A. C.

Work which is desirable:

The organization and administration of rural credits.

By Prof. J. E. Kammeyer, K. S. A. C.

ZOOLOGY.

Work under way:

The effect of the extirpation of the hypophysis as demonstrated in the frog, *Rana pipiens*.

The effects of the removal of the thyroid gland as illustrated in *Rana pipiens*.

Regeneration of germ cells in the hydroid, *Corymorpha*, upon the removal of the germ gland.

By Prof. B. M. Allen, University of Kansas.

Chromosomes of several species of crickets.

Methods of breeding in certain marine worms.

Life history of certain tunicates.

By Prof. W. J. Baumgartner, University of Kansas.

Chromosomes studies II: The problem of synapsis in the chromosomes of the Tettigidæ.

Chromosome studies IV: A case of a supernumerary deficient sex-chromosome.

Investigation of the inheritance of body characters correlated with germ-cell structures in the Tettigidæ.

A case of twins, one of which is a mule the other a horse.

The crossing of varieties of *Peromyscus* and *Microtus*.

The inheritance of skin pigment in Indian-white crosses.

Testing the inheritance of the effects of alcohol on guinea pigs.

Eugenic studies: Inheritance of human traits.

By Prof. W. R. B. Robertson, University of Kansas.

Endamoeba buccalis: Life history.

Light experiments on intestinal parasites.

By Prof. Nadine Nowlin, University of Kansas.

Structures and habits of *Diplocaulus*.

The position of the amphibia in our phylogenetic system.

The skull structure of Eryops, and a comparison of Texas and New Mexico specimens.

By Prof. Herman Douthitt, University of Kansas.

Life histories of parasitic flat worms.

By Earl O'Roke, assistant instructor in zoölogy, University of Kansas.

The effect of removal of thyroid gland upon the development of the other glands of internal secretion as typified in the frog.

By Jas. B. Rogers, student, working under Prof. B. M. Allen, University of Kansas.

The factors that determine the sex in the frog, *Rana pipiens*.

By Wilbur W. Swingle, Ph. D., thesis, under Prof. B. M. Allen, University of Kansas.

The effect of removal of the thyroid gland upon the development of the skeleton in *Rana pipiens*.

By George S. Terry, student, working under Prof. B. M. Allen, University of Kansas.

Spermatogenesis of the domestic chicken.

By Lewis A. Curry, student, working under Prof. W. R. B. Robertson, University of Kansas.

Chromosomes of the turkey.

By Josephine Martin, student, working under Prof. W. R. B. Robertson, University of Kansas.

Halosporidium parasite of a marine crustacean.

By Regina Woodruff, student, working under Prof. Nadine Nowlin, University of Kansas.

Distribution of birds in Swope Park.

By A. E. Shirling, under Prof. W. J. Baumgartner, University of Kansas.

Sea slugs and other development.

By Ione Trees, student, under Prof. W. J. Baumgartner, University of Kansas.

Studies of inheritance and evolution in Orthoptera.

Studies of inheritance in skunks.

Studies of inheritance in karakule sheep and their crosses on American sheep.

Studies of inheritance in crosses of *Bos Indicus* on *Bos taurus*, and the American bison on *Bos taurus*.

By Prof. Robert K. Nabours, Station Zoölogist, K. S. A. C.

Life histories of fowl cestodes.

Fowl nematode transmission.

Embryology of cestodes.

Dovainea cesticillus.

By Prof. J. E. Ackert, K. S. A. C.

Relation of cytology to heredity. (The structure of the germ cells in *Paratettix*.)

Gynandromorphism.

Superfetation.

By Prof. Mary T. Harman, K. S. A. C.

A study of the habits and distribution of the native mammals of Riley county.

An investigation of the factors determining habitat selection in the pocket mouse (*Perognathus paradoxus*).

Efficiency of various kinds of traps and methods of setting in the control of the pocket gopher (*Geomys bursarius*).

Efficiency of various kinds of poisons for use against home rats and pocket gophers.

By Lee R. Dice, K. S. A. C.

Work to be started in 1917:

Experimental work upon glands of internal secretion in larval frogs.

By Prof. B. M. Allen, University of Kansas.

Determination of effects of dissolved mineral substances upon the growth of normal tadpoles and of those which have been deprived of the hypophysis and of the thyroid glands.

By Prof. B. M. Allen and Prof F. W. Bruckmiller, University of Kansas.

Removal and transplantation of germ cells and germ glands in from larvæ.

By Prof. B. M. Allen, University of Kansas.

Testing the inheritance of the effects of lead poisoning in rats.

Studies of inheritance in varieties of prairie dogs, quail, prairie chicken and turkeys.

The role of the mitochondria in the germ cells of *Fettigidæ*, testing whether or not it is concerned in heredity.

By Prof. W. R. B. Robertson, University of Kansas.

The scapular foramen of lizards and other tetrapods.

Life history of *anaplocephalidæ* cestodes.

By Prof. Herman Douthitt, University of Kansas.